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May 24, 1995

OUR FILE NUMBER

KRP-50026

Ms. Elizabeth J. Adams
Project Manager
Superfund Program H-6-5
Hazardous Waste Management Division
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: NEC Electronics Inc.
Phase IV Soil Investigation
Draft Addendum 1

Dear Ms. Adams:

Enclosed are two (2) copies of the Draft Addendum 1 to the Phase IV Soil Investigation Report for your review. As agreed upon in the April 19 meeting with NEC/Bechtel and EPA, we anticipate receiving your comments by June 2, so that the final version can be submitted by June 16, 1995.

If you have any questions about this report, please do not hesitate to call me at (415) 434-9100.

Very truly yours,

Joseph A. Darrell

for SHEPPARD, MULLIN, RICHTER & HAMPTON

Enclosure

cc: M. Kierig
S. Hartt
J. Argyres (w/o encl.)

D\L004844J.FKO

DRAFT

PHASE IV SOIL INVESTIGATION ADDENDUM 1

501 ELLIS STREET

MOUNTAIN VIEW, CALIFORNIA

Conducted September to October 1990

Submitted In Fulfillment Of
The Requirements Of U.S. EPA
CERCLA §106 Order, Docket No. 91-4

Prepared for

NEC Electronics Inc.

By

Bechtel Environmental, Inc.

San Francisco, CA

May 1995

12 pages

ADDENDUM 1 TO THE PHASE IV SOIL INVESTIGATION 501 ELLIS STREET PROPERTY REPORT

This addendum to the Phase IV Soil Investigation 501 Ellis Street Property report was prepared in response to the U.S. Environmental Protection Agency's (EPA) review comments dated March 30, 1995.

Comment 1: *In general, the Phase IV Soil Investigation Report evaluates the presence of contamination in relation to the presence of trichloroethene (TCE) above the established clean up criteria of 0.5 parts per million in soil. Though evaluation of TCE concentrations is required, the 501 Ellis street property utilized many other chemicals that are also chemicals of concern as listed in the §106 Order. In reviewing the data and the occurrence of detections throughout the past investigations at the facility, there are several other chemicals that are present at the 501 facility which should be evaluated. Criteria for determining these chemicals should include the number of detections of the constituent and the presence of chemicals above their Federal or State applicable or relevant and appropriate requirements (ARARs). The explanation of Significant Difference clearly states that "all chemicals must be remediated so that their respective concentrations are at or below applicable or relevant and appropriate requirements and do not exceed maximum cumulative risk levels."*

At a minimum the report should evaluate the following additional chemicals to determine if levels detected exceed ARARs, and the locations of these detections; freon 113, trichlorobenzenes, phenol, and tetrachloroethene. Locations of detections of freon 113 and trichlorobenzene were presented on figures 3.8 through 3.11, however there was no evaluation of their toxicity or clean up criteria. Table 1.5 shows that 1,2,4-trichlorobenzene and freon 113 have been detected in half of the samples analyzed for the constituents. TCE, 1,2,3-trichlorobenzene, and phenol have been detected in approximately one third of the samples analyzed. Though tetrachloroethene was detected less often, it was detected above the cleanup criteria at boring BIV-056.

Please evaluate the concentrations of these chemicals respective to the appropriate clean up criteria. In determining the appropriate ARARs for a constituent the

most stringent level should be utilized regardless of whether it is a State or Federal ARAR.

Response: The reference to ARARs or soil cleanup criteria in EPA's comments was clarified by EPA in a meeting conducted on April 19, 1995. ARARs are defined as 100 times the State or Federal Maximum Contaminant Level (MCL), following the derivation of the TCE soil cleanup level.

Results of samples collected during the Phase IV soil investigation were evaluated using this criteria to determine if any chemicals exceed their respective ARARs. The more stringent of either the State or Federal MCL was used in the evaluation. The overall list of chemicals detected during previous investigations (provided in Table 1.5 of the Phase IV report) is not included in this evaluation because the table includes concentrations found in samples that were collected prior to the tank removal and soil excavation which occurred in 1984. Much of the soil characterized by these borings was removed when the tanks and associated soil were removed in 1984. Therefore, the values in Table 1.5 do not represent current site conditions.

Table A.1 provides a comparison of the compounds detected during the Phase IV soil investigation and the chemicals of concern identified in the §106 Order with applicable soil cleanup criteria. 1,2,3-trichlorobenzene (1,2,3-TCB) and 1,3,5-trichlorobenzene (1,3,5-TCB) are not included in the table because they were not detected during the Phase IV soil investigation. As shown in Table A.1, only one sample had concentrations that exceed applicable soil cleanup criteria. TCE and tetrachloroethene (PCE) concentrations were in excess of their respective ARARs in the sample collected from boring BIV-056 at a depth of 8 to 8.5 feet (ft). Boring BIV-056 was located about 8 ft south of the former solvent storage tank. TCE was detected in 75 of 228 samples analyzed (33 percent) whereas PCE was detected in 8 of 228 samples analyzed (4 percent) during the Phase IV soil investigation. Based on the analytical results from boring BIV-056, this area was targeted for remediation and affected soils were removed during the soil remediation conducted in 1991 (see Figure A.1.) Soil remediation activities are described in more detail in the *Soil Remediation Report for 501 Ellis Street, Mountain View, California, (Bechtel, March 1992).*

Soil Data Generated After the 1984 Excavation. The results of soil samples collected after the 1984 excavation (summarized in Table 1.4 of the Phase IV report) were also evaluated with respect to their applicable soil cleanup criteria. A comparison of the compounds detected after the 1984 excavation with their respective ARARs is provides in Table A.2.

Four compounds collected from two soil samples exceed their respective soil cleanup criteria. These are: TCE and 1,2,4-trichlorobenzene (1,2,4-TCB) which were detected in the sample collected from boring B44, and benzene and vinyl chloride, which were detected in the sample collected from boring B37 (see Figure A.2).

TCE and Benzene. TCE and benzene ARARs were exceeded in samples collected from the same depth interval (17.5 to 19.5 ft). As stated in Section 1.3.4 of the Phase IV Soil Investigation report, samples collected from depths averaging 18 ft were very likely taken below the water table. Therefore, the results appear not to represent vadose zone conditions, but rather saturated soil or ground-water quality at the water table. Saturated soil and ground-water data are beyond the scope of this document and are addressed elsewhere.

1,2,4-TCB. It should be noted that during the conduct of the Phase IV soil investigation, there was no existing MCL for 1,2,4-TCB. The MCL for 1,2,4-TCB became effective on January 17, 1994. 1,2,4-TCB was detected at a concentration above its new ARAR in the sample collected from 9 to 11 ft below ground surface (bgs). Ground-water levels during excavation activities in 1984 were unusually high which may have prevented deep excavation of materials. At this depth, the concern would be the potential threat to ground water. A review of historical ground-water data was performed to determine whether 1,2,4-TCB was detected in samples collected from ground-water monitoring wells (wells NEC1A, 3A and 3B1) located in the vicinity of boring B44. A monitoring well location map is provided as Figure A.3. 1,2,4-TCB was detected only in well NEC1A at a concentration of 0.72 µg/L and 1.1 µg/L in July 1988 and April 1990, respectively. Both concentrations are below the MCL for 1,2,4-TCB of 70 µg/L.

Boring B44 was drilled and sampled in a paved area. 1,2,4-TCB was detected at a concentration of 12,000 µg/kg, over an order of magnitude lower than the preliminary

remediation goal for 1,2,4-TCB in residential soil of 620,000 µg/kg *(Preliminary Remediation Goals, First Quarter 1995, U.S. Environmental Protection Agency Region IX, January 1995).*

Vinyl Chloride. The concentration of vinyl chloride (100 µg/kg) detected in the sample collected from boring B37 exceeds its respective cleanup criteria (50 µg/kg). The sample was collected from a depth of 3 to 5 ft bgs. Vinyl chloride was detected infrequently, in only two of 264 samples (1 percent) analyzed for volatile organic compounds (VOCs) during the Phase II investigation and in none of the 228 samples taken during the Phase IV soil investigation. It has not been detected in any of the ground-water monitoring rounds performed to date. Moreover, vinyl chloride was not found in samples collected from adjacent borings drilled during Phase IV (e.g., Borings 1 and 2 drilled within 5 ft of boring B-37). See Figure A.2.

Comment 2: *Any chemical, if it exceeds its clean up criteria will need to be remediated. In Section 4.0 (page 68), the text states that the occurrence of some of the chemicals was localized and infrequent with the exception of TCE. All detections, whether infrequent or localized, need to be evaluated in regards to their appropriate ARARs.*

Response: As shown in Table 1, the only sample collected during the Phase IV soil investigation which had concentrations of TCE and PCE that exceeded their respective cleanup criteria was collected from boring BIV-056 at a depth of 8 to 8.5 feet. Boring BIV-056 was located within the area excavated during the soil remediation conducted in 1991. The actual area excavated is shown in Figure A.1. (See also response to Comment 1.)

For the compounds detected in soils samples prior to Phase IV and after the 1984 excavation, ground-water quality will be monitored in the areas where soil cleanup criteria were exceeded. If TCE, benzene, 1,2,4-TCB or vinyl chloride are found to have affected ground-water quality, they will be incorporated into a site specific ground-water program.

Comment 3: *The text states that head-space vapor sample data subjected to the Photovac that "was obviously an outlier" was excluded*

from the averaging calculation. NEC should elaborate on the criteria used to determine how or what data was considered an outlier.

Response: The on-site analytical procedures using the Photovac portable gas chromatograph were based on the method developed by Dr. Thomas Spittler, U.S. EPA Region I Laboratory. Soil samples for onsite analysis were run in replicate at least twice and up to six times to determine the average reported value. Non-detectable replicates were removed from the calculation and the final result averaged only those values above the instrument detection limit in an effort to generate the more conservative result. Preliminary review and evaluation of the data was performed by the on-site chemist during analysis; and data suspected to be outliers, in judgment of the chemist, were removed from the final calculations. The outliers were due to insufficient sample aliquot volume, operator error, or other external factors; and were readily apparent by the large discrepancies between the replicate values (usually greater than 70 relative percent difference). With the exception of one sample analysis, the removed outlier was always less than the calculated average result. The one exception was an averaged final result of 2.0 µg/kg which had one replicate result of 7.1 µg/kg removed. The difference between the values near the detection limit is considered minute and does not change the analysis or interpretation of the data.

LIST OF ATTACHMENTS

Tables

Figures

Table A.1

COMPARISON OF COMPOUNDS DETECTED DURING THE PHASE IV SOIL INVESTIGATION WITH APPLICABLE ARARS

Compound	Concentration Range (ug/kg)	Number of Samples Analyzed	Number of Samples in Which Detected	Frequency of Detections (Percent)	MCL (ug/l) (a)	MCL*100 (ug/kg)	Sample(s) above MCL*100	Depth of Sample above MCL*100 (ft)
1,1,1-Trichloroethane	6.5-7.1	228	3	1	200	20000	—	—
1,1-Dichloroethane	ND	228	0	0	5 (b)	500	—	—
1,1-Dichloroethene	ND	228	0	0	6 (b)	600	—	—
1,2,4-Trichlorobenzene	65-1400	74	12	16	70 (c)	7000	—	—
1,2-Dichlorobenzene	33-300	305	6	2	600	60000	—	—
1,2-Dichloroethene	ND	228	0	0	10 (b)	1000	—	—
Chloroform	6.9	228	1	0	100 (d)	10000	—	—
Freon 113	7.1-10.0	228	6	3	1200 (b)	120000	—	—
Phenol	740	74	1	1	—	—	—	—
Tetrachloroethene	6.9-1300	228	8	4	5	500	BIV-056	8-8.5
Toluene	35-140	3	2	67	1000	100000	—	—
Total 1,2-Dichloroethene	6.0-82	228	8	4	10 (b)	1000	—	—
Trichloroethene	5.0-550	228	75	33	5	500	BIV-056	8-8.5
Trichlorofluoromethane	23-830	228	2	1	150 (b)	15000	—	—
Vinyl Chloride	ND	228	0	0	0.5 (b)	50	—	—

Notes:

NA = Not Analyzed. A dashed line indicates that the information is not available or not applicable.

ARARs = Applicable or Relevant and Appropriate (MCL*100)

MCL = Maximum Contaminant Level

(a) Federal MCLs unless otherwise indicated. A dashed line indicates that State or Federal MCLs are not available.

(b) State MCLs

(c) Effective January 17, 1994.

(d) Total trihalomethanes

Table A.2

COMPARISON OF COMPOUNDS DETECTED IN SOIL AFTER THE 1984 EXCAVATION AT 501 ELLIS STREET WITH APPLICABLE ARARS

Compound	Maximum Concentration (ug/kg)	Number of Samples Analyzed	Number of Samples in Which Detected	Frequency of Detections (Percent)	MCL (ug/l) (a)	MCL*100 (ug/kg)	Sample(s) above MCL*100	Depth of Sample above MCL*100 (ft)
1,1,1-Trichloroethane	7.1	228	3	1	200	15000	—	—
1,1-Dichloroethene	51	264	1	0.4	6 (b)	600	—	—
1,2,3-Trichlorobenzene	1000	4	4	100.0	—	—	—	
1,2,4-Trichlorobenzene	12000	79	16	20.3	70 (c)	7000	B44	9-11
1,2-Dichloroethene	82	228	8	3.5	10	1000		
1,3,5-Trichlorobenzene	59	4	1	25.0	—	—	—	
Benzene	330	39	2	5.1	1 (b)	100	B37	17.5 -19.5 (d)
Bromodichloromethane	1300	264	4	2	100 (e)	10000	—	—
Bromoform	1100	264	4	2	100 (e)	10000	—	—
Chloroform	940	264	7	3	100 (e)	10000	—	—
Dibromochloromethane	1200	257	4	2	100 (e)	10000	—	—
Ethyl Benzene	53	39	1	2.6	680 (b)	68000	—	
Freon 113	2600	257	14	5	1200 (b)	120000	—	—
Phenol	740	74	1	1.4	—	—	—	
Tetrachloroethene	160	264	9	3	5	500	—	—
Toluene	140	39	3	7.7	1000	100000	—	
Total Dichlorobenzene	300	305	6	2.0	—	—	—	
Trichloroethene	2300	264	88	33	5	500	B44	17.5 -19.5 (d)
Trichlorofluoromethane	830	228	2	1	150 (b)	15000	—	—
Vinyl Chloride	100	264	2	1	0.5 (b)	50	B37	3-5
Xylene	230	39	7	17.9	1750 (b)	175000	—	

DRAFT

Table A.2 cont.

COMPARISON OF COMPOUNDS DETECTED IN SOIL AFTER THE 1984 EXCAVATION AT 501 ELLIS STREET WITH APPLICABLE ARARS

Notes:

NA = Not Analyzed. A dashed line indicates that the information is not available or not applicable.

ARARs = Applicable or Relevant and Appropriate (MCL*100)

MCL = Maximum Contaminant Level

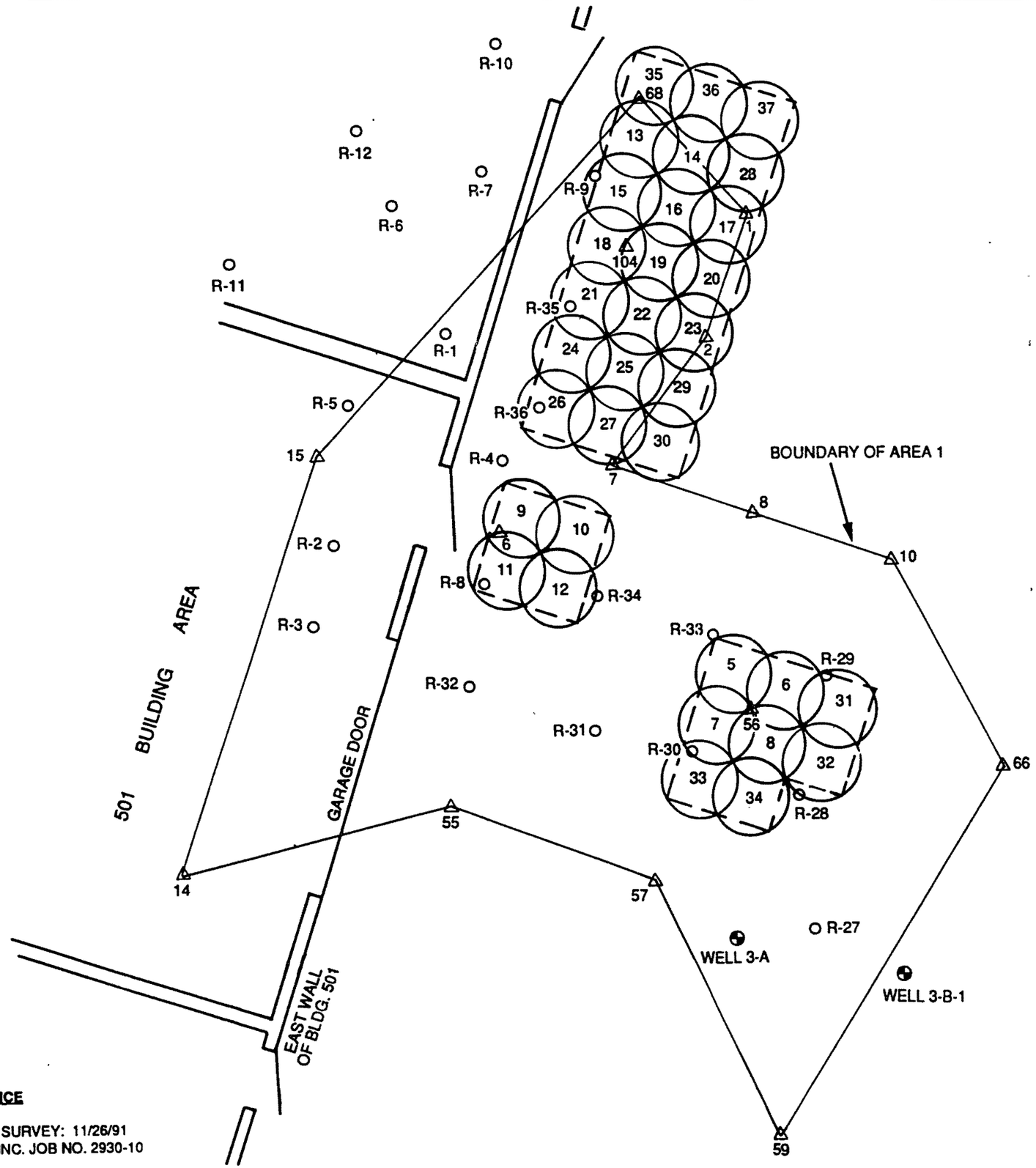
(a) Federal MCLs unless otherwise indicated. A dashed line indicates that State or Federal MCLs are not available.

(b) State MCLs

(c) Effective January 17, 1994.

(d) Sample collected in saturated soil.

(e) Total trihalomethanes



LEGEND

- Area of excavation
- 9 — Auger hole
- WELL 3-A — Monitoring well locations
- 10 △ — Previous soil borings
- R-30 ○ — Final exploratory boring locations (Nov. 1991)

N

0 5 10

SCALE IN FEET

REFERENCE

DATE OF SURVEY: 11/26/91
TOWILL, INC. JOB NO. 2930-10

DRAFT

BECHTEL SAN FRANCISCO		
NEC - MOUNTAIN VIEW, CA 501 ELLIS STREET		
ACTUAL EXCAVATION IN AREA 1		
JOB No.	DRAWING No.	REV.
17660	FIGURE A.1	

ELLIS STREET

WELL 8B1
WELL 8A
WELL 8B2
WELL 8B3
WELL 22A
WELL 9BI
WELL 9A
WELL 23A
WELL 7A
WELL 21B
WELL 21A
WELL 12A
WELL 12B1
WELL 3A
WELL 3BI
WELL 11A
WELL 1A

BURIED TANKS REMOVED IN 1984

B-38 B-37 B-39 B-40 B-42 B-41 B-43 B-44 B-45 B-46

GRAVEL PILE

RAMP

SB-25 SB-26

HETCH HETCHY AQUEDUCT RIGHT OF WAY

HETCH HETCHY AQUEDUCT (BURIED)

SOUTHERN PACIFIC RAILROAD

N

EXPLANATION

WELL 1A — MONITORING WELL

28 — KLEINFELDER SOIL BORING

B-40 — BECHTEL SOIL BORING, PHASE 2

SB-26 — BECHTEL SOIL BORING, PHASE 3

16 — BECHTEL SOIL BORING, PHASE 4

CONCRETE LINED TRENCH

INACCESSIBLE CONCRETE LINED TRENCH

BURIED PIPES – NO TRENCH

GRATED TRAPS

PIPING FLOW DIRECTION

NOTES:

1. Location of buried tanks, removed in 1984, approximate.
2. Monitoring well locations surveyed.
3. Soil boring locations approximate.

0 20 40 60 80

SCALE IN FEET

DRAFT

BECHTEL
SAN FRANCISCO

NEC · MOUNTAIN VIEW, CA
501 ELLIS STREET

SOIL BORING LOCATIONS

JOB No.	DRAWING No.	REV.
17660	FIGURE A.2	

A-11

N 330,000

E. MIDDLEFIELD ROAD

N 331,000

N 332,000

NATIONAL AVE.

E 1,549,000

ELLIS ST.

NEC17A
NEC17B1
NEC15B1
NEC15A
NEC14A
NEC14B1
NEC23A
NEC7A
NEC8B3
NEC8B2
NEC8B1
NEC8A
NEC10A
NEC10B1
NEC24A
NEC22A
NEC1A
NEC21B1
NEC9A
NEC9B1
NEC3A
NEC3B1
NEC21A
NEC4A
NEC20B1
R6B1
NEC20A
NEC11A
NEC12A
NEC12B1
NEC13B1
NEC13A
NEC18B2
NEC18B1
NEC18A
NEC16A
NEC16B1
NEC19A
NEC19B1

NEC 401

NEC 475

NEC 501

NEC 550

S.P.R.R.

CLYDE CT.

LOGUE AVENUE

E 1,550,000

A-12

EXPLANATION

NEC12A NEC Monitoring Well

0 100 200 400

SCALE IN FEET

DRAFT

BECHTEL
SAN FRANCISCO

NEC ELECTRONICS INC.
MOUNTAIN VIEW, CA

LOCATION OF NEC MONITORING WELLS

JOB No.	DRAWING No.	REV.
17660	FIGURE A.3	